2007 Fall Meeting
Search Results

Cite abstracts as **Author(s) (2007), Title, *Eos Trans. AGU, 88*(52), Fall Meet. Suppl., Abstract xxxxx-xx**

Your query was:
au=laske

HR: 1340h
AN: **V33B-1380**
TI: Body-wave tomography at Hawaii from the first PLUME deployment of ocean-bottom seismometers
AU: * **Wolfe, C J**
EM: *cecily@soest.hawaii.edu*
AF: *University of Hawaii at Manoa, 1680 East-West Road, Honolulu, HI 96822, United States*
AU: **Solomon, S C**
EM: *scs@dtm.ciw.edu*
AF: *Carnegie Institution of Washington, 5241 Broad Branch Road, NW, Washington, DC 20015-1305, United States*
AU: **Laske, G**
EM: *glaske@ucsd.edu*
AF: *University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0225, United States*
AU: **Collins, J A**
EM: *jcollins@whoi.edu*
AF: *Woods Hole Oceanographic Institution, MS 24, 360 Woods Hole Road, Woods Hole, MA 02543-1050, United States*
AU: **Detrick, R S**
EM: *rdetrick@whoi.edu*
AF: *Woods Hole Oceanographic Institution, MS 24, 360 Woods Hole Road, Woods Hole, MA 02543-1050, United States*
AU: **Orcutt, J A**
EM: *jorcutt@ucsd.edu*
AF: *University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0225, United States*
AU: **Bercovici, D A**
EM: *david.bercovici@yale.edu*
AF: *Yale University, PO Box 208109, New Haven, CT 06520-8109, United States*
AU: **Hauri, E H**
EM: *hauri@dtm.ciw.edu*
AF: *Carnegie Institution of Washington, 5241 Broad Branch Road, NW, Washington, DC 20015-1305, United States*
AB: The Hawaiian PLUME (Plume-Lithosphere Undersea Melt Experiment) project is a multi-disciplinary program to study the deep mantle structure of the Hawaiian hotspot and address the debate over whether one end of the island chain is underlain by a classical plume from the deep mantle and how mantle upwelling interacts with the overlying lithosphere beneath the Hawaiian Swell. PLUME involved two consecutive ocean-bottom seismometer (OBS) deployments and a concurrent deployment of 10 land seismometers along the islands. The

first deployment of 35 broadband OBSs in 2005-2006 was centered on the island of Hawaii with stations spaced about 75 km apart. A second OBS deployment with larger aperture and larger station spacing was carried out in 2006-2007. Here, we present analyses of body-wave arrival time data from the first PLUME OBS deployment. The OBS horizontal components were azimuthally oriented from particle motions of teleseismic P waves. High quality relative arrival times of P and S waves were measured with the multi-channel cross-correlation method of VanDecar and Crosson [1990]. In the frequency band 0.05-0.1 Hz, P and S wave analyses each yielded more than 1000 arrival times from about 40 earthquakes moderately well distributed in azimuth. Because of the high noise levels on the seafloor at Hawaii, most measurements are from $M_w \geq 6.0$ earthquakes. We also obtained about 300 P-wave arrival times from 10 earthquakes in the frequency band 0.5-1 Hz. P-wave arrival times were used in checking clock drift corrections to the OBS data. The separate arrival time datasets have been inverted for P- and S-wave velocity models beneath Hawaii using both ray theoretical and finite-frequency methods; results from both approaches display general similarity. Data from the second OBS deployment, once analyzed, should be useful in broadening the region of consideration and extending downward the depth resolution of the imaging.

DE: 7208 Mantle (1212, 1213, 8124)
DE: 7270 Tomography (6982, 8180)
DE: 8137 Hotspots, large igneous provinces, and flood basalt volcanism
SC: Volcanology, Geochemistry, Petrology [V]
MN: 2007 Fall Meeting

New Search